

paragraph. Additionally, Applicant acknowledges that the rejections under 35 USC §102(b) or in the alternative 35 USC §103 over Hollinghurst or Di Biase have been withdrawn.

Claims 1-3, 6, 8-12 and 14-20 stand rejected as being anticipated under 35 USC §102(b) by Ichihashi et al (U.S. Patent 5,792,731). The Examiner states that Ichihashi et al teaches a lubricating composition comprising a phosphorus extreme pressure agent and an alkaline earth metal detergent. The Office Action indicates that the phosphorus extreme pressure compound may be a phosphite and the alkaline earth metal detergent may be a salt of a carboxylic acylating agent, such as a salicylate. The Office Action indicates that the general teachings for the amount of the detergent and the total base number (TBN) and the amount of phosphite present would anticipate the present claims.

As currently pending, Applicant's claims are directed to lubricating compositions which contain a basic metal salt of an carboxylic acylating agent and a hydrocarbyl phosphite of a specific formula. The lubricating composition additionally is free of metal deactivators and the ratio of the overbased metal salt, based on total base number, to the equivalents of hydrocarbyl phosphite, based on phosphorus atoms, is at least one.

Applicant's lubricating composition are useful in manual transmissions for off-road and heavy duty vehicles. These manual transmissions rely on composite friction plates and steel plates for shifting gears. The lubricating composition provides friction properties that allow for the smooth changing of gears. In a manual transmission, especially those with synchronizers, friction must be retained to avoid clashing of the synchronizers. The clashing leads to loud noises and is undesirable. Applicant has discovered a lubricating composition which provides effective frictional properties to manual transmission fluids.

Ichihashi et al relates to a lubricating composition for continuous variable transmissions and methods for lubricating them with said lubricant. Ichihashi et al teaches that the continuous variable transmissions have a problem related to the use of steel belts on the transmission. The coefficient of friction decreases so much with typical lubricating compositions that large amounts of torque are not able to be transmitted by the transmission. Ichihashi et al teaches that because of this torque problem these transmissions have been generally limited to small capacity engines.

Ichihashi et al teaches that the combination of a sulfur based extreme pressure agent, a phosphorus based extreme pressure agent and an alkaline earth metal detergent are used to provide the lubricating composition for the continuous variable transmission. Ichihashi et al teaches at column 2, lines 5-20 that the preferred sulfur based extreme pressure agent is a sulfurized oil or fat, thiocarbamate or thioterpenes; the preferred phosphorus base extreme pressure agent is tricresyl phosphate or amine salts of alkyl or alkenyl acid phosphate esters; and the alkaline earth metal detergent is calcium phenate.

Ichihashi et al teaches that the phosphorus extreme pressure agent may be one of a series of phosphorus compounds (see column 3, line 60 - column 4, line 55). Ichihashi et al does mention phosphite esters as a potential phosphorus extreme pressure agent. However, there are no examples in Ichihashi et al where a phosphite is used as the phosphorus extreme pressure agent.

Ichihashi et al teaches that an alkaline earth metal detergent is used in the composition and states

"Calcium phenate is desirable because of its ability to improve the coefficient of friction" (see column 5, lines 9-13).

Ichihashi et al teaches that a salicylate may be one of the detergents however there are no examples to the use of an alkaline earth metal salicylate.

The only examples present in Ichihashi et al are described in Table 1 (column 7 of the patent). In those examples the sulfurized extreme pressure agents are either sulfurized oil or thioterpene. The phosphorus extreme pressure agents are tricresyl phosphate or acid phosphate ester amine. The alkaline earth detergents are calcium sulfonate or calcium phenate. No phosphites or alkaline earth metal salts of carboxylic acylating agents are used.

Ichihashi et al contains no specific example to the combination of a phosphite and a alkaline earth metal salt of a carboxylic acylating agent as required by Applicant's claims. Accordingly, Applicant submits that Ichihashi et al does not anticipate their present claims.

Furthermore, Ichihashi et al contains no motivation for one skilled in the art to use the combination of a phosphite together with an alkaline earth metal salt of a carboxylic

acylating agent. Ichihashi et al specifically teaches that preferred materials for the phosphorus extreme pressure agents are tricresyl phosphate and amine salts of alkyl and alkenyl acid phosphate esters (column 2, lines 15-17). Additionally, Ichihashi et al teaches that the preferred alkaline earth metal detergent is calcium phenate (column 2, lines 19-20). Additionally, Ichihashi et al teaches that calcium phenate is particularly desirable because of its effect on the improvement of the coefficient of friction. Ichihashi et al teaches that the coefficient of friction is a problem for continuous variable transmissions.

Since Ichihashi et al provides motivation to use calcium phenate and not an alkaline earth metal salt of a carboxylic acylating agent and no motivation to use a phosphite, Applicant submits that Ichihashi et al does not render their claims obvious. Ichihashi et al fails to contain any suggestion or motivation to combine a phosphite and alkaline earth metal salt of carboxylic acylating agent as required by Applicant's claims. Therefore, Applicant requests withdrawal of the rejection and allowance of the claims.

In the event any issues remain in the prosecution of this application, Applicant requests the Examiner call the undersigned attorney to expedite allowance of the claims. If any fees are required for the filing of these papers, Applicant requests the Commissioner to charge those fees to Deposit Account #18-0988.

Respectfully submitted,

RENNER, OTTO, BOISSELLE & SKLAR, LLP

By

  
William C. Tritt  
Reg. No. 32,510

1621 Euclid Avenue  
Nineteenth Floor  
Cleveland, Ohio 44115  
(216) 621-1113